

QUARTERLY SUMMARY
OF THE
IMPROVEMENTS AND DISCOVERIES
IN THE
MEDICAL SCIENCES.

ANATOMY AND PHYSIOLOGY.

1. *Transplantation of Testicles.*—In *Müller's Archives* is a most interesting paper with this title, by PROFESSOR BERTHOLD, of Gottingen:—

A series of comparative experiments were made by him: he castrated six young cocks, two and three months old, leaving the wattles, combs, and spurs untouched.

From two of them (*a* and *d*), he removed both testicles. Thenceforth they took on the nature of capons, fighting very seldom and feebly, and giving the well-known monotonous capon crow. Their combs and wattles were pale, and little developed, and the head remained small. About five months after, they were killed; a small scar occupied the place of each testicle, and the seminal duct had degenerated to a mere thread.

From two others (*b* and *e*), only one testicle was removed, the other left in the belly. In two others (*c* and *f*), both testicles were excised; but one belonging to *c* was transplanted into the belly of *f*; and, *vice versa*, one of its testicles transplanted into *c*, thrust amongst the bowels, and left there.

All four retained the characters of uncastrated fowls; they crowed lustily, frequently fought with each other, and with other young cocks, and exhibited the ordinary inclination for the hens. Their combs and wattles developed like those of others.

The cock *b* was killed two months after; its single testicle was of the ordinary place, but had hypertrophied, and, on section, a white fluid exuded, which contained cells, but no spermatozoa.

On the same day, the remaining three had their well developed comb and wattles excised. The cock *e*, at the same time, was deprived of the remaining testicle; and *c* and *f* examined in the ordinary situation in vain for their transplanted organ.

The now fully castrated *b* never grew comb or wattles; it ceased to concern itself about the hens, and fought no more with its own sex: *c* and *f*, however, reproduced both comb and wattles, and preserved their ordinary chivalrous demeanour. They were killed six months after the transplantation. In *c*, the testicle was found behind the colon and between the ends of the cœca. In *f* it was nearer their middle, but otherwise in the same situation. They were of large size, and received large branches of the mesenteric vessels, which passed towards them, entered, and then took the ordinary course, in relation to their seminal tubes. On incising them, a normal seminal fluid exuded with the ordinary cells and spermatozoa.

The author concludes:—

1. That the testicles are transplantable, and reunite with living tissues, after

their union from the body, not only at their ordinary site, but in an abnormal situation.

2. Like the grafted tree, the organ on this new place still preserves its specific properties, and secretes its specific fluid.

3. It is well known that, after division, a reunion of nerves restores sensation and movement. And it follows, from these experiments, that, as the reunion could not have been one of those originally divided, there are no *specific* seminal nerves; that nerves only are requisite—a strong, nay, almost a fatal objection to the theory that would constitute the sympathetic a *trophic* nerve, or nerve in itself, specifically organized with reference to nutrition.

4. The consensual and antagonistic relations of the life of the individual and the species, seen from puberty to old age, are continued in spite of the separation of the testicles from their ordinary place and nerves, and their removal to another part of the body. These animals were, in all respects, veritable *males*. It would thence follow, that the *consent* in question results from the productive relation of the testicle; that is, through the operation of its secreted fluid immediately upon the blood, and through a corresponding operation of the blood upon the general organism. In this, no doubt, the nervous system takes an important part. These experiments are most interesting, and fully bear out the author's deductions; but the first must be limited to the animals in question, or, at least, must not be hastily extended to higher organizations or older animals. This, however, in no degree impairs the physiological conclusions set forth by the author.

Still, however, the real question that science perpetually asks with a sigh, concerning all secretions, is as undecided as ever. "Why does the testicle secrete semen?"—we can as little answer as ever. Nay, more, let us recollect an important and much more immediate step in the process is wanting—the great agent is unknown.

For how, from these instances, can we determine whether the union of nerves did or did not precede the resumption of secretion? or, let us say, rather, in such young animals, the *perfection* of this process? Yet an answer to this question would be an important addition to our present knowledge.—*Medical Times*, July 21, 1849.

2. *On the Minute Anatomy of the Sudorific Organs.* By G. RAINY, Demonstrator of Anatomy in St. Thomas' Hospital. (*Proceedings of Royal Med. and Chirurg. Society*, June 22, 1849.)—The author observes that the epidermis is composed of two very distinct layers—a superficial and a deep layer; the former consisting entirely of epidermic scales, whilst the latter is made up wholly of epidermic cells, excepting where this layer is perforated by the sudoriferous ducts. These layers are distinguishable from one another by the dark colour of the deeper layer appearing to present an undulating border. The fact of only the cells being in one layer, and the scales in another, he observes, is contrary to the opinion generally entertained, that the epidermic cells, produced at the inferior part of this layer, become gradually and progressively changed into epidermic scales, in proportion as they approach the surface. It also renders the explanation of the cause of the spiral course of the sudoriferous ducts more simple; for, as in this layer the epidermic scales undergo no change in their structure, and but very little in their dimensions, the duct, being built up of these scales, must remain the same through the entire thickness of this layer, as when it first entered it. In the superficial layer of the epidermis, the sudoriferous ducts are composed entirely of epidermic scales, so placed that the long diameter of each is parallel with the axis of that part of the passage into which it enters. This part of a duct is destitute of membranous parietes, being merely a passage between epidermic scales. In the deep layer of the epidermis, the sudoriferous ducts are situated above, between flattened epidermic scales, with their long axis placed as before observed; and below, between epidermic cells in different states of development. Now, as some of the lowest of these cells are so imperfectly formed as scarcely to have the character of cells, it must follow that the part of the passage which is situated between such cells cannot have its parietes well defined; and there must be a part in every duct (where